

Mellette County Rural Development Site Analysis

A Study by
Planning and Development District III

Funded by the South Dakota Value Added Agriculture Subfund

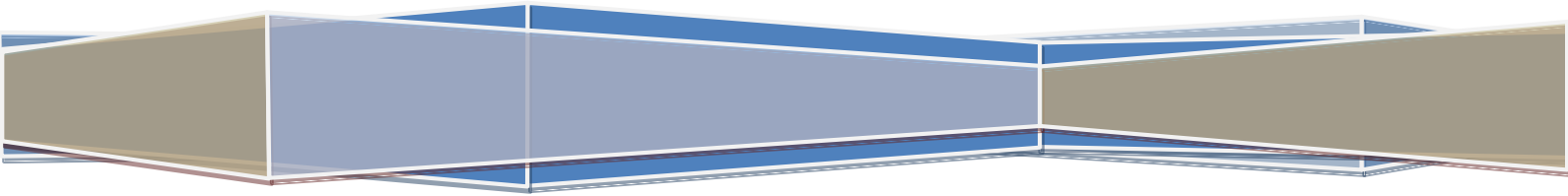


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Summary

Program History

As part of the South Dakota Department of Agriculture's (SDDA) efforts to enhance economic development opportunities and better support local control of development, the County Site Analysis Program (Program) was developed in the summer of 2013. The Program assists participating counties in identifying potential rural properties with site development opportunities. The analysis and subsequent report will provide local leaders with information and research-based resources to foster well informed decisions regarding the future of their respective regions. It also helps identify and plan for potential challenges that may arise should those opportunities be pursued.

In implementing the Program, SDDA is working closely with South Dakota's Planning and Development Districts. The First District Association of Local Governments (First District) and Planning and Development District III (District III) developed a methodology for a feasibility analysis that focuses on identifying locations for rural economic development. The methodology addresses the feasibility of locations for the development of concentrated animal feeding operations, agricultural processing and storage facilities, and other agriculturally-related commercial/industrial development. The analysis takes into consideration local zoning and State permitting requirements along with the availability of infrastructure necessary to accommodate certain rural economic development projects.

The identification of each prospective site's relative advantages and constraints provides decision-makers with useful information for assessing the development potential of each site. The information contained herein has the potential to streamline the marketing process thereby reducing timelines, financial expenditures and labor costs. Local governments, landowners, economic development groups and state agencies such as the Department of Agriculture or Governor's Office of Economic Development all benefit from the rural site development analysis. These entities now have access to a marketing tool based on proactive planning efforts. In addition, the report may assist local governments in updating their comprehensive plans, zoning ordinances and permitting procedures while also increasing local awareness of potential development opportunities.

Methodology

The analysis methodology developed for this study utilized an established set of criteria deemed critical to further development of the subject properties while specifically addressing the suitability of a site for either a concentrated animal feeding operation (CAFO) or an Agriculturally-related Industrial Development (AID). **Table 1** lists the site assessment criteria identified as being necessary in order to conduct analysis of the potential sites. Minimum thresholds for each criterion were utilized to establish a hierarchy classification of "Good", "Better" and "Best" sites. Those sites designated as "Best" sites were those not limited by any of the criteria considered. Sites not meeting the minimum criteria required of the "Best" sites were subsequently identified as "Good" or "Better".

Specific information regarding the Site Assessment Criteria and methodology utilized for developing the "Good", "Better", and "Best" hierarchy may be found in **Appendix I and II**, respectively.

Table 1: Site Assessment Criteria

CAFO/AID Criteria
Access to County and State Road Network
Proximity to Three-phase Electricity Supply
Proximity to Rural Water System
Capacity of Rural Water System
Location of Shallow Aquifer
Existing Zoning Districts/Land Use Plans
Buildable Parcel
County CAFO Zoning Setback Requirements (If applicable) *
Proximity to Rural Residences* & Communities
Proximity to Rail**

*CAFO Assessment Criteria Only

** AID Assessment Criteria Only

Limiting Factors

While this report focuses on the specific sites matching the site assessment criteria standards, it became apparent that each site also possesses its own unique set of site characteristics which present both advantages and constraints. For example, there were **not** many sites in the County which complied with the County's zoning regulations with those remaining sites lacking the necessary infrastructure

The analysis found that the primary limiting factor(s) in reviewing the development potential of properties within Mellette County for a "Better" or "Best" CAFO site development is the availability of quality potable water. The same is true with AID developments which also require a reliable source of not only high quality but also large quantities. Access to a centralized water source such as rural water was a key criterion in the site analysis process.

In addition to the availability of quality potable water, additional limiting factors such as access to County and State road networks, 3-Phase power, rail, and the county's existing CAFO setback requirements limited the number of potential AID and CAFO sites. It should be noted that although the analysis considered these limiting factors, the analysis does not make the claim that the only sites for CAFO/AID development in Mellette County be relegated to the specific sites identified herein.

The site assessment process was limited in scope to include undeveloped parcels and did not consider expansion of existing CAFOs or commercial/industrial uses. In addition to this limited scope, minimum values were utilized in ranking each site with regards to zoning requirements and infrastructure demands. No attempt was made to rank each site within the three identified classifications. The uniqueness of each criterion identified in Table 1 warrants a comprehensive review of the potential impact each may have upon a subject property. This study is intended as the first step of a multi-faceted development process potentially leading to more specific site evaluations such as Phase 1 Environmental Assessments, engineering plans, development cost analysis, etc.

Results

Identifying and evaluating potential sites for development is the first step in planning for economic development in rural Mellette County. The findings of this report will assist in determining the potential role each site may play in supporting economic development and should be considered when planning for future projects within Mellette County.

Utilizing Geographic Information System (GIS) technology, District III identified **28** sites within Mellette County that met the minimum site assessment standards of the CAFO analysis, **Table 2** and **9** sites that met the minimum standards of the AID analysis, **Table 3**. These sites complied with local zoning ordinances and were in close proximity to infrastructure necessary to support the previously identified economic development activities.

The CAFO and AID Analysis Maps further detail High Water Use (HWU) and Low Water Use (LWU) CAFO and AID sites. HWU CAFO sites are those locations which require 150,000 gallons of water per day. This amount of water is necessary to support, for example, a 3,000 head dairy. LWU CAFO sites are those locations which require 30,000 gallons of water per day, a volume necessary to support either a 600 head dairy or 5,000 head sow operation. HWU AID sites are those locations which require water at levels necessary to support high water uses such as food processing or ethanol production. The water requirement for a HWU AID site is 410,000 gallons of water per day. This high water use is currently unable to be supported by the rural water system. Therefore, no sites were found to be acceptable for HWU AID. LWU AID sites are those locations which require water at levels necessary to support most agriculturally-related commercial/industrial development, 30,000 gallons per day. The analysis identified **0** High Water Use and **28** Low Water Use CAFO sites. Whereas, there were **0** High Water Use and **9** Low Water Use AID. The following maps provide information at a township level regarding the number of “Good”, “Better” and “Best” CAFO and AID sites.

Table 2:
Mellette County CAFO Sites by Hierarchy Classification

CAFO Site Classification	Good Sites	Better Sites	Best Sites
Low Water CAFO	16	1	11
High Water CAFO	0	0	0

Table 3:
Mellette County AID Sites by Hierarchy Classification

AID Site Classification	Good Sites	Better Sites	Best Sites
Low Water AID	9	0	0
High Water AID	0	0	0

No High Water CAFO Map – Page Left Blank Intentionally

MELLETTIE COUNTY

Concentrated Animal Feeding Operation (CAFO) sites 2016

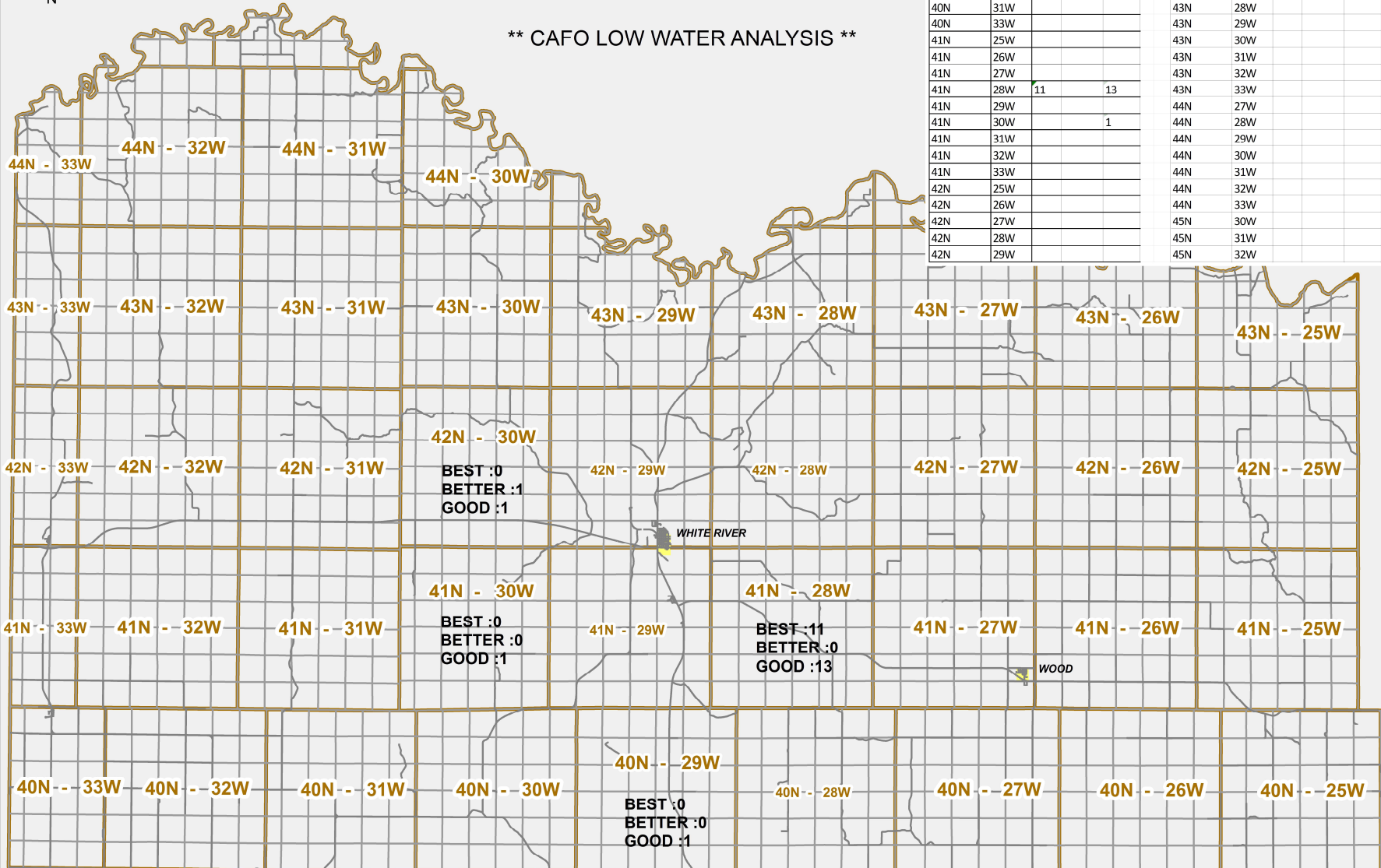
Legend
ROAD
CITY LIMITS
SECTIONS
TOWNSHIP



**** CAFO LOW WATER ANALYSIS ****

TOWNSHIP	RANGE	BEST	BETTER	GOOD
40N	32W			
40N	25W			
40N	26W			
40N	27W			
40N	28W			
40N	29W		1	
40N	30W			
40N	31W			
40N	33W			
41N	25W			
41N	26W			
41N	27W			
41N	28W	11		13
41N	29W			
41N	30W		1	
41N	31W			
41N	32W			
41N	33W			
42N	25W			
42N	26W			
42N	27W			
42N	28W			
42N	29W			

TOWNSHIP	RANGE	BEST	BETTER	GOOD
42N	30W	1		1
42N	31W			
42N	32W			
42N	33W			
43N	25W			
43N	26W			
43N	27W			
43N	28W			
43N	29W			
43N	30W			
43N	31W			
43N	32W			
43N	33W			
44N	27W			
44N	28W			
44N	29W			
44N	30W			
44N	31W			
44N	32W			
44N	33W			
45N	30W			
45N	31W			
45N	32W			



No High Water AID Map – Page Left Blank Intentionally

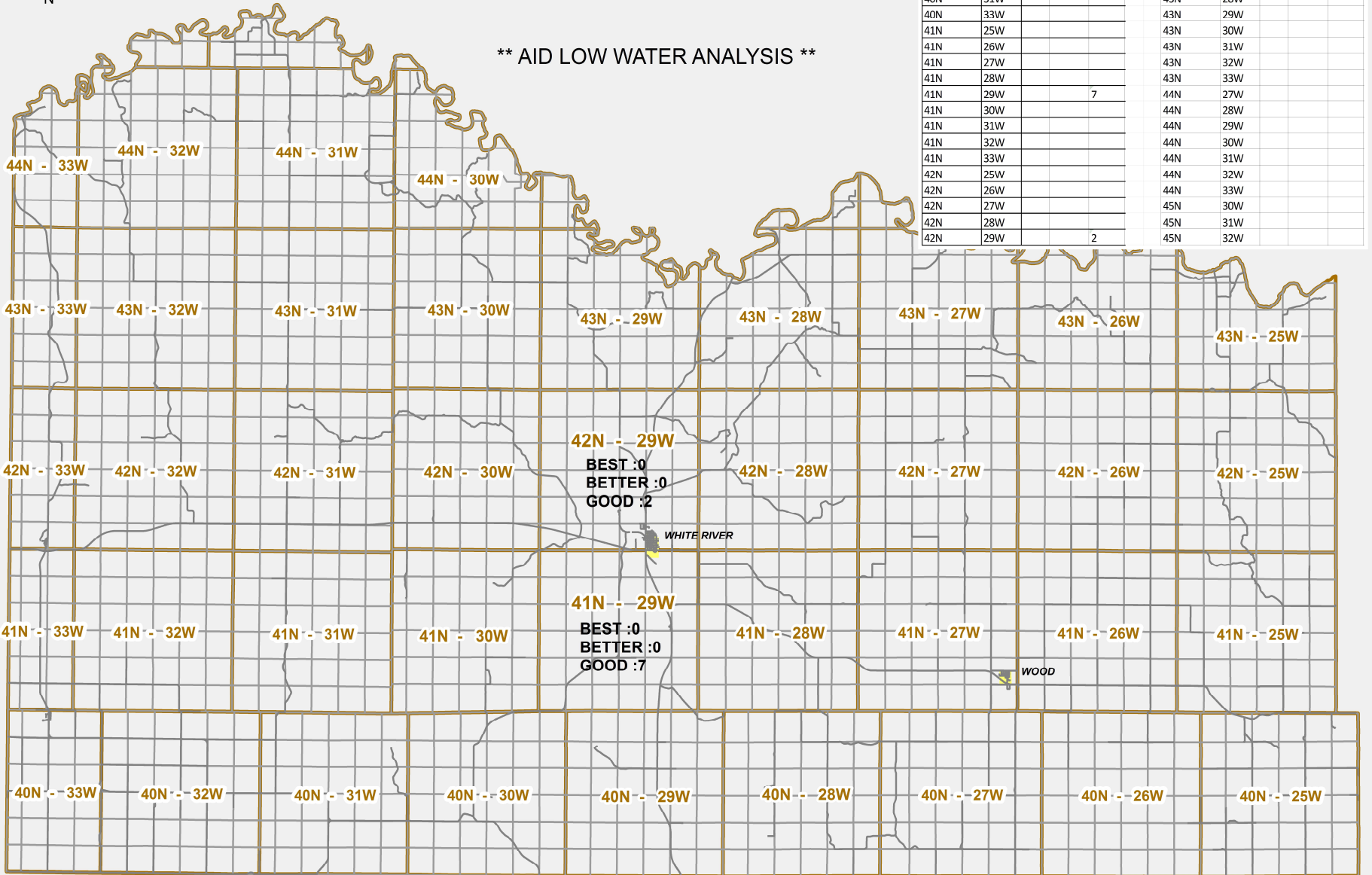
Legend
 ROAD
 CITY LIMITS
 SECTIONS
 TOWNSHIP

MELLETT COUNTY

Agriculturally-related
 Industrial Development
 (AID) sites 2016

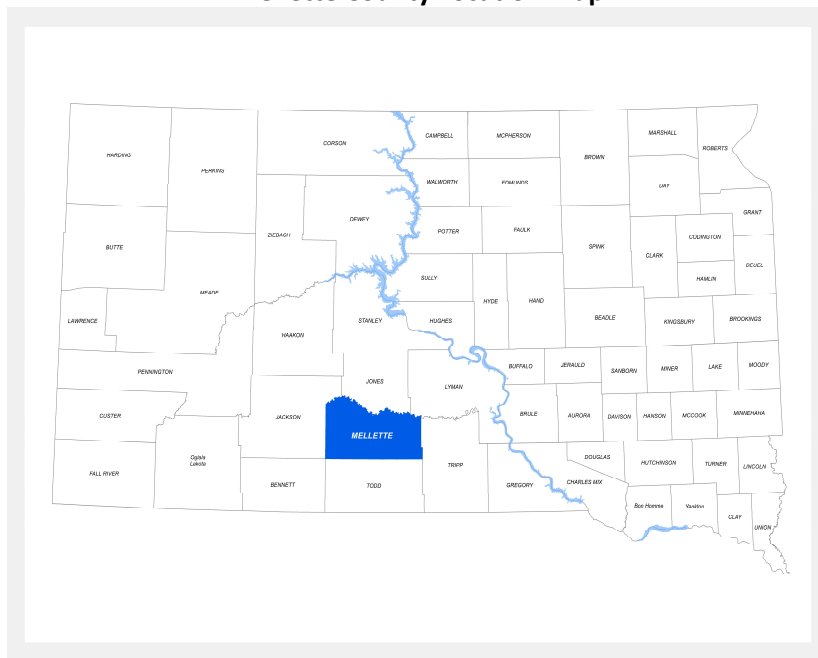
** AID LOW WATER ANALYSIS **

TOWNSHIP	RANGE	BEST	BETTER	GOOD	TOWNSHIP	RANGE	BEST	BETTER	GOOD
40N	32W				42N	30W			
40N	25W				42N	31W			
40N	26W				42N	32W			
40N	27W				42N	33W			
40N	28W				43N	25W			
40N	29W				43N	26W			
40N	30W				43N	27W			
40N	31W				43N	28W			
40N	33W				43N	29W			
41N	25W				43N	30W			
41N	26W				43N	31W			
41N	27W				43N	32W			
41N	28W				43N	33W			
41N	29W			7	44N	27W			
41N	30W				44N	28W			
41N	31W				44N	29W			
41N	32W				44N	30W			
41N	33W				44N	31W			
42N	25W				44N	32W			
42N	26W				44N	33W			
42N	27W				45N	30W			
42N	28W				45N	31W			
42N	29W			2	45N	32W			



APPENDIX I: SITE ASSESSMENT CRITERIA

Mellette County Location Map



The methodology developed for this study utilized an established set of criteria deemed critical to further the development of the subject properties while specifically addressing the suitability of a site for either a CAFO or an AID.

Sites possessing all of the criteria identified as critical within the analysis will be those most sought by potential developers. The occurrence of these sites may be somewhat rare. Therefore, sites under consideration for either a CAFO or AID may meet the majority of criteria, but may also be lacking in several specific areas. Any sites not meeting all the criteria may be burdened with a limitation thus requiring more specific analysis. In these cases, the feasibility of developing the site is highly dependent upon the identified limitation(s).

A limiting condition could be the availability of water volume at an identified potential CAFO site. For example, the water demand for a 3,000 head dairy is approximately five times greater than the needs of a 5,000 head sow operation even though each operation could generally be subject to similar zoning regulations. In this situation, the lack of water at a volume necessary for a dairy may lend the site to be more likely identified as a possible location for a swine facility.

It should be noted that neither this example nor the analysis explores potential alternatives to the absence of adequate rural water volume such as upsizing water distribution infrastructure or securing an alternative water source, all of which hold the potential to mitigate this constraint thereby facilitating the proposed development. Rather, the analysis recognizes upgrading infrastructure identified as necessary to support rural economic development projects may increase the number of developable sites within the County. In other cases, failure to meet certain criteria, such as access to a quality road network, may result in a situation where development of the site becomes economically unfeasible.

The site assessment criteria, depending upon whether or not the site is for a CAFO or AID project, have been divided into the three major categories of **Land Use Regulations**; **Environmental Constraints**; and **Infrastructure**.

LAND USE REGULATIONS

Economic development planning in Mellette County must be conducted in concert with the county's overall economic development goals. All development activities, including those specifically related to agriculture need to be accomplished within the parameters set forth in local and regional planning documents. Land use or development guidance is traditionally provided via local documents such as **Comprehensive Plans, Zoning Ordinances, Policies, Mission Statements** and other local economic development plans and initiatives. If available, the analysis reviewed said documents in order to determine compliance with proposed CAFO and AID development. The following is a synopsis of County policies regarding CAFO and AID development.

Comprehensive Land Use Plan/Zoning Regulations

Ideally, economic developers seek sites that are zoned and eligible for specific uses. Mellette County has both a comprehensive land use plan and zoning regulations which specifically address agricultural related development. Planning documents such as a comprehensive plan provide guiding policies regarding the promotion or restriction of specific land use activities. Zoning regulations may restrict the location of CAFO or AID sites. The analysis included the current zoning regulations as they apply to CAFO and AID sites.

Chapter II of the Mellette County Comprehensive Plan provides background information with the later pages focusing on economic issues within the county. Mellette County's leadership recognized the importance of agriculture to the local, regional, and state economies and devoted seventy-five (75) percent of the economic discussion to agriculture. Chapter III within the 1999 Comprehensive Plan is dedicated to goals and objectives which also includes policies. There were six (6) subsections within the Chapter addressing various subjects of which two, agriculture and economic development are pertinent to this study. Each subsection identifies one overall goal from which objectives and policies are derived. The goals, objectives and policies for agriculture are as follows:

- **It is the goal of Mellette County to promote agricultural production practices that enhance the agricultural economy and take reasonable steps to preserve and protect the environment:**

Objective 1: The County will consider environmental protection issues and existing land uses in designing development regulations.

Policy 1 – A: County regulations will seek to minimize the effects of agricultural production practices on air quality, water quality and other environmental concerns.

Policy 1 – B: County regulations will seek to minimize effects of agriculture production practices on neighboring properties.

- Objective 2:** The County will protect production agriculture and agricultural land from the encroachment of other land uses, whenever possible.
- Policy 2 – A: County regulations will reflect the importance of existing agricultural practices, when compared to non-compatible land uses.
- Objective 3:** The County will assist agricultural producers, within its means, to encourage new investment.
- Policy 3 – A: The county will support and assist in the development of agricultural production including public infrastructure development, sponsorship of grants and seeking other available assistance.
- Policy 3 – B: Tax abatements may be considered as investment incentives if it is determined to be beneficial to the county.
- Policy 3 – C: Extension programs will be supported, if financially feasible.
- Objective 4:** The County will support regulations that enhance land stewardship and environmental protection.
- Policy 4 – A: Potable water supplies shall be protected and preserved from contamination and encroachment of incompatible land use practices.
- Policy 4 – B: Land owners will be encouraged to work with appropriate state and federal agencies in both understanding and following applicable regulations.
- Objective 5:** The County will compile information, within its means, to facilitate the public awareness of the importance of agriculture and environmental protection.
- Policy 5 – A: The County will work with local, regional, state and federal entities in exchanging public information.

These goals, objectives, and policies address many of the challenges which face much of the state's counties. Mellette County is attempting to address the challenges by proactive actions such as this study. In reviewing the 1999 Comprehensive Plan, Mellette County recognizes the importance of large scale animal agricultural development and agriculturally-related commercial and industrial development.

Zoning Regulations

Mellette County has incorporated these land use policies into its zoning regulations by utilizing agricultural easements, residential buffers, and CAFO waivers within its zoning ordinance. These policies clearly identify the county's position on CAFO's and its support of the creation and expansion of concentrated animal feeding operations in rural areas.

As noted, the Mellette County Zoning Ordinance is based upon goals, objectives, and policies stated within the Comprehensive Plan. The policies addressing agriculture preservation and CAFOs are the foundation for the requirements set forth within the zoning ordinance sections addressing animal feeding operations which include:

- All CAFOs are required to comply with applicable state and federal regulations;
- CAFOs of greater than 2,000 animal units should meet minimum requirements of the South Dakota DENR General Permit;
- CAFOs of greater than 2,000 animal units shall obtain a Storm Water Permit for Construction Activities;
- CAFOs and their respective waste facilities of greater than 2,000 animal units shall comply with the following setbacks:

• Public and Private Wells	2,640 feet
• Lakes, Rivers, Streams, and Stock Dams Classified as Fisheries	2,640 feet
• Lakes, Rivers, Streams Classified as Drinking Water Supply	5,280 feet
• All Road Right-Of Ways	250 feet
• All Property Lines Delineating a Change in Ownership	100 feet
• Designated 100 Year Floodplain	Prohibited
- CAFOs and their respective waste facilities of greater than 2,000 animal units shall be located no closer than two (2) miles from any incorporated municipality or residentially zoned area;
- CAFOs and their respective waste facilities of greater than 2,000 animal units shall be located no closer than one (1) mile from any church, school, commercially zoned area, or residential dwelling;
- CAFOs of greater than 2,000 animal units shall transport animal waste no further than fifteen (15) miles from the point of origination for land application.
- CAFO Animal Waste Facilities will be reviewed by the Planning Commission and Board of Adjustment. Upon review, additional design and site development specifications may be required.
- CAFOs of greater than 2,000 animal units shall prepare a nutrient management plan;
- All manure application within Mellette County requires appropriate separation from property lines, rights-of-way, specific water features, and various land uses depending upon the method of application;
- CAFOs should be situated with access to roads capable of handling potential traffic volumes associated with the use without increasing the cost of maintaining those roads;

Concentrated Animal Feeding Operation Setbacks

Mellette utilizes graduated setback requirements based upon the size of the CAFO. For the purpose of the analysis a 3,000-head dairy, or 4,290 animal units, example was used for identifying High Water Use CAFO sites. In Mellette County, a 3,000-head dairy is required to observe a minimum setback of **2 miles** from incorporated municipality limits and residentially zoned areas. Established residences, commercially-zoned properties, schools and churches require a **1 mile** setback. This analysis also used a 5,000-head sow farrowing operation, or 3,250 animal units, for the purposes of a Low Water Use CAFO. The setback requirements for the 5,000-head sow farrowing operation are identical to the 3,000-head dairy operation. Both the dairy and swine operations would also be required to be located at least **2,640 feet** from lakes, rivers and streams classified as fisheries pursuant to the Administrative Rules of South Dakota (ARSD). Further, all CAFO's are **prohibited in a designated 100-year flood plain**.

Buildable Parcel

One criterion deemed necessary to facilitate development of either a CAFO or an AID was land area. A parcel of 40 buildable acres was set as the minimum for consideration within the analysis. In order to be considered, the property must have consisted of 40 contiguous acres and be able to support development upon all 40 acres. Parcels without 40 buildable acres were not considered in the final analysis.

Proximity to Communities

The AID analysis also considered sites within one mile of a community or at specific locations identified by the County. This was done because many communities and counties have established growth plans for economic development within certain proximities of communities or at locations with existing infrastructure such as paved roads. Also since the parameters of the original AID analysis excluded all AID sites within counties without access to rail, the criterion of "proximity to a community" was determined to be an adequate alternative for counties without rail facilities to identify potential AID sites.

ENVIRONMENTAL

If available, the location of shallow aquifers in relation to potential development sites was included in the analysis. In reviewing shallow aquifers, it is critical to note that they are included in the analysis for two distinct and very different reasons. Shallow aquifers may be utilized as a potential water source to support development. These same aquifers are also vulnerable to pollution due to their proximity to the surface and may be required to be protected via setbacks and development limitations.

At present, there is limited information regarding the occurrence and/or location of shallow aquifer in Mellette County. Further, Mellette County has not enacted or currently enforces aquifer protection or surface water regulations more restrictive than the State of South Dakota. Therefore, all sites within the county were considered eligible for development.

Prior to or contingent upon acquiring a parcel for development it is assumed other environmental factors potentially affecting the property would be addressed via a Phase I Environmental Assessment or similar process. It is recommended that developers consider undertaking such an inquiry prior to executing a major commitment to a particular location.

INFRASTRUCTURE

The term infrastructure is broad though in the context of property development the term includes essential services such as water, sewer, electrical, telecommunications, and roads. With regards to the rural site analysis process; access to quality roads, electrical capacity and water supply were deemed essential and identified as site selection criteria.

Transportation

Access to quality roads was identified as critical to determining the development potential of a parcel. The proximity of a potential development site to either a state or county road was established as one of the parameters in conducting the rural site analysis. In addition to utilizing the South Dakota Department of Transportation's road layer to identify roads and surface types, local experts were consulted to assist in identifying the road network. District III requested the Mellette County Highway Superintendent to identify segments of the county road system inadequate to support a CAFO or AID. Sites accessed only by township roads that were located further than one mile from the intersection of a County or State hard surface road network were eliminated from the analysis.

A potential development site's proximity to certain road types impacted its designation. Those parcels abutting hard surface roads were consistently ranked higher than those served by gravel roads. In reviewing CAFO and AID sites, parcels adjacent to a county or state hard surface road were designated "Better" or "Best" for transportation resources. Parcels adjacent to county gravel roads or within one mile of an intersection with a county/state road network were designated "Good" for CAFO sites. Parcels within one mile of an intersection with a county/state hard surface road network were designated "Good" for AID sites.

Access to rail was also considered to be an important factor in locating an AID site. However, there are no rail facilities in Mellette County. To compensate for lack of rail facilities the analysis removed the rail requirement and considered sites within one mile of a community or at locations identified by the County. Without rail, there are no "Best" sites. However, those parcels within one mile of a municipality or at locations identified by the County are designated as "Good" and "Better".

Electric Supply

Access to 3-phase power was designated as a site characteristics criterion for both CAFO and AID development. District III contacted Cherry-Todd Electric Cooperative, La Creek Electric Association and West Central Electrical Cooperative to obtain the location and capacity of the 3-Phase infrastructure within the county. All parcels whether for CAFO or AID development adjacent to a 3-phase power line were designated "Best" for electricity resources. Whereas, parcels within one mile of a three-phase power line were designated "Better" and those within two miles of a three-phase power line were designated "Good".

Water Supply

The ability to secure specific information regarding a rural water system's operations to include storage, distribution, and capacities proved to be the most complex and difficult component of the infrastructure analysis. Due to this, water resources were evaluated differently than transportation and electric infrastructure. While transportation and electric infrastructure were classified based primarily upon location and availability of three-phase power, the analysis of rural water systems first required the evaluation of the water system, specifically, each system's supply and distribution capacities.

Development sites were then selected upon the proximity to water service. The classifications with regards to water supply and their respective criteria are as follows:

1. **"Best" Classification**

a. CAFO

- i. High Water Use CAFO Site- If the site was adjacent to or within an area where a rural water system had sufficient supply and distribution capacity to provide 150,000 gallons per day, the site area was designated as "Best" for water resources.
- ii. Low Water Use CAFO Site - If the site was adjacent to or within an area where a rural water system had sufficient supply and distribution capacity to provide 30,000 gallons per day, the site area was designated as "Best" for water resources.

b. AID

- i. High Water Use AID Site- If the site was adjacent to or within an area where a rural water system had sufficient supply and distribution capacity to provide 410,000 gallons per day, the site area was designated as "Best" for water resources.
- ii. Low Water Use AID Site- If the site was adjacent to or within an area where a rural water system had sufficient supply and distribution capacity to capacity to provide 30,000 gallons per day, the site area was designated as "Best" for water resources.

2. **"Better" Classification**

a. CAFO

- i. High Water Use CAFO Site- If the site was within an area where a rural water system had either a sufficient supply or distribution capacity to provide 150,000 gallons per day, the site area was designated as "Better" for water resources.
- ii. Low Water Use CAFO Site- If the site was within an area where a rural water system had either a sufficient supply or distribution capacity to provide thirty thousand 30,000 gallons per day, the site area was designated as "Better" for water resources.

b. AID

- i. High Water Use AID Site- If the site was within an area where a rural water system had sufficient supply or distribution capacity to provide 410,000 gallons per day, the site area was designated as “Better” for water resources.
- ii. Low Water Use AID Site- If the site was within an area where a rural water system had sufficient supply or distribution capacity to provide 30,000 gallons per day, the site area was designated as “Better” for water resources.

3. “Good” Classification

- a. In the event the Rural Water System has neither supply nor distribution capacity to serve either a Low or High Water Use CAFO or Low Water Use AID as defined above, the site area was designated as “Good” for water resources if it was located within 2 miles of a river, stream or lake designated by SD DENR Administrative Rule 74:51:02 and 74:51:03 which assigns the following uses to rivers streams and lakes – domestic water supply, stock watering waters, irrigation waters, commerce and industry waters, cold water and warm water permanent fish life propagation waters. The analysis does not make any conclusions regarding the quantity or quality of the water source identified in SD DENR Administrative Rule 74:51:02 and 74:51:03. Only that the potential for a water source may exist. The designation as “Good” for water resources was not applied to High Water Use AID sites due to the water volume requirements of High Water Use AID sites and the lack of available data regarding the capacity of shallow aquifers. Therefore, High Water Use AID sites without a water resource designation of “Better” or “Best” were deemed unusable for the purpose of the analysis.

The site analysis sought to address whether or not the Rural Water System serving the region had excess water treatment capacity (supply) and their ability to serve potential properties (distribution). In order to address the issue of supply District III contacted and requested location and capacity information from the two rural water providers within Mellette County. West River/Lyman-Jones Rural Water Systems, Inc (WRLJRS) serves a majority of the county with Tripp County Water Users District (TCWUD) serving the southeast corner of the county. Both WRLJRS and TCWUD were requested to provide information regarding their available treated water capacity while also noting on maps those geographic areas where distribution capacity existed which could provide water volumes at 30,000, 150,000, and 410,000 gallons per day, respectively.

WRLJRS stated that it may or may not have an adequate supply of water depending upon the actual location of a proposed CAFO or AID while further stating only portions of their system had the necessary distribution infrastructure to deliver the minimum requirements of the analysis. WRLJRS identified the areas within the county that could possibly supply potential service. 11 locations/sections of land that could meet the minimum Low Water Use CAFO “Best” requirement of 30,000 gallons per day.

APPENDIX 2: RESEARCH AND METHODOLOGY

This section describes the methodology utilized to evaluate the suitability of potential CAFO or AID development sites.

Step 1: Identification of Site Assessment Criteria

Table A1 lists the site assessment criteria identified as being necessary to conduct an analysis of potential sites. Utilizing these criteria as a guide, a variety of research methods were employed to compile the GIS data sets utilized within the analysis. Research efforts included the examination of local, regional, and state planning documents along with existing GIS data layers.

Table A1: Site Assessment Criteria

CAFO Criteria	AID Criteria
Access to County and State Road Network	Access to County and State Road Network
Proximity to Three-Phase Electricity Supply	Proximity to Three-Phase Electricity Supply
Proximity to Rural Water System	Proximity to Rural Water System
Capacity of Rural Water System	Capacity of Rural Water System
Location of Shallow Aquifer	Location of Shallow Aquifer
Buildable Parcel	Buildable Parcel
Existing Zoning Districts/Land Use Plans	Existing Zoning Districts/Land Use Plans
Proximity to Rural Residences & Communities	Proximity to Communities
County CAFO Zoning Setback Requirements	Proximity to Rail

Step 2: Evaluation of Site Assessment Criteria

After developing the data sets in **Table A1**, the analysis identified those site locations that:

1. Complied with zoning guidelines; and
2. Were in close proximity to infrastructure necessary to support either CAFO or AID development.

Concentrated Animal Feeding Operation (CAFO) Analysis

The GIS analysis removed all parcels within the County from consideration that:

1. Were not within one mile of a County or State road;
2. Were not within two miles of three-phase electric power;
3. Did not meet the minimum standards for available water;
4. Did not meet the setbacks from (county specific uses i.e. - existing residences, churches, businesses and commercially zoned areas);
5. Did not meet the setbacks from municipalities;
6. Did not contain a buildable footprint of at least 40 acres.

After applying the buildable footprint requirement to each site, the availability of necessary infrastructure was incorporated into the analysis. The general location of available water, electric and road infrastructure was applied to the remaining sites to establish “Good”, “Better” and “Best” hierarchy of potential development sites. **Table A2** exhibits the minimum requirements necessary for a site to be classified as “Good”, “Better” or “Best” for **CAFO development**.

Table A2: CAFO Hierarchy Classification Requirements

Location Criteria	Description	Good	Better	Best
Roads	Site is <u>adjacent</u> to County/State hard surface road		X	X
	Site is within <u>one (1) mile</u> of a County/State road	X		
Water	Site is <u>adjacent</u> to rural water system area that has both supply <u>and</u> distribution capacity to provide 150,000 gallons per day or 30,000 gallons per day			X
	Site is <u>adjacent</u> to or within rural water system area that has either supply <u>or</u> distribution capacity to serve either 150,000 gallons per day or 30,000 gallons per day		X	
	Site is within <u>two (2) miles</u> of a river, stream or lake designated by SD DENR Administrative Rule 74:51:02 and 74:51:03 which assigns the following uses to rivers streams and lakes – domestic water supply, stock watering waters, irrigation waters, commerce and industry waters, cold water and warm water permanent fish life propagation waters	X		
Electricity	Site is <u>adjacent</u> to three-phase power			X
	Site is within <u>one (1) mile</u> of three-phase power		X	
	Site is within <u>two (2) miles</u> of three-phase power	X		
Buildable Parcel	Site contains buildable area of at least forty <u>(40) acres</u>	X	X	X

Agriculturally-related Industrial Development (AID)

The GIS analysis removed all parcels within the County from consideration that:

1. Were not within one mile of a County or State hard surface road;
2. Were not within two miles of three-phase electric power;
3. Were not within one mile of rail, if applicable;
4. Were not within one mile of a community or at locations identified by the county
5. Did not meet the minimum standards for available water;
6. Did not contain a buildable footprint of at least 40 acres.

After applying the required location based site assessment criteria to each site, the availability of necessary infrastructure was incorporated into the analysis. The general location of available water, electric, rail and road infrastructure was applied to the remaining sites to establish “Good”, “Better” and “Best” hierarchy of potential development sites. **Table A3** exhibits the minimum requirements necessary for a site to be classified as “Good”, “Better” or “Best” **for AID development**.

Table A3: AID Hierarchy Classification Requirements

Location Criteria	Description	Good	Better	Best
Roads	Site is <u>adjacent</u> to County/State hard surface road		X	X
	Site is within <u>one (1) mile</u> of a County/State hard surface road	X		
Rail	Site is <u>adjacent</u> to rail facility			X
	Site is within one half $\frac{1}{2}$ <u>mile</u> of rail facility		X	
	Site is within <u>one (1) mile</u> of rail facility	X		
Water	Site is <u>adjacent</u> to rural water system area that has both supply and distribution capacity to provide 410,000 gallons per day or 30,000 gallons per day			X
	Site is <u>adjacent</u> to or within rural water system area that has either supply or distribution capacity to serve either 410,000 gallons per day or 30,000 gallons per day		X	
	Site is within <u>two (2) miles</u> of a river, stream or lake designated by SD DENR Administrative Rule 74:51:02 and 74:51:03 which assigns the following uses to rivers streams and lakes – domestic water supply, stock watering waters, irrigation waters, commerce and industry waters, cold water and warm water permanent fish life propagation waters *	X		
Electricity	Site is <u>adjacent</u> to three-phase power			X
	Site is within <u>one (1) mile</u> of three-phase power		X	
	Site is within <u>two (2) miles</u> of three-phase power	X		
Proximity to Community	Site is within <u>one (1) mile</u> of community	X	X	
Buildable Parcel	Site contains buildable area of at least forty <u>(40) acres</u>	X	X	X

* Rivers, streams, and lakes designated by SD DENR Administrative Rule 74:51:02 and 74:51:03 are not used for High Water Use AID site analysis as they require specific Rural Water System Supply and Distribution Capacities

Step 3: Site Development Recommendations

Based on the analysis, **28** sites were classified as Good, Better, or Best for CAFO development (**Table A4**) and **9** sites were classified as Good, Better, or Best for AID development (**Table A5**).

While this study only identifies those sites that met the required criteria for the analysis, it should be noted that other sites within the county may be satisfactory for CAFO and AID development. Sites not within the specified distance of a hard surfaced County or State road or does not have desired infrastructure (rail, water, power) within close proximity does not necessarily negate its development potential.

Table A4:
Mellette County CAFO Sites by Hierarchy Classification

CAFO Site Classification	Good Sites	Better Sites	Best Sites
Low Water CAFO	16	1	11
High Water CAFO	0	0	0

Table A5:
Mellette County AID Sites by Hierarchy Classification

AID Site Classification	Good Sites	Better Sites	Best Sites
Low Water AID	9	0	0
High Water AID	0	0	0

APPENDIX 3: CONTACT INFORMATION

Planning & Development District III

Executive Director: Greg Henderson
GIS Coordinator, GISP: Harry Redman
Community Development Specialist: Brian McGinnis
Phone: (605) 665-4408

First District Association of Local Governments

Executive Director: Todd Kays
GIS Coordinator: Ryan Hartley
Phone: 605-882-5115

Mellette County

Director of Equalization: Jenny Mitchell
Phone: (605) 259-3150
Planning and Zoning Director: Jenny Mitchell
Phone: (605) 259-3150
Highway Superintendent: Leon Huber
Phone: (605) 259-3385

Rural Water Systems

West River Lyman Jones Rural Water Systems, Inc.
Jake Fitzgerald
Email: wrlj_ruralwater@goldenwest.net
Phone: (605) 669-2931

Tripp County Water User District
Manager: Russ Phillips
Email: tcwud@gwtc.net
Phone: (605) 842-2755

Electric Providers

LaCreek Electric
Wayne Sterkel - General Manager
Email: lacreek@lacreek.com
Phone: (800) 655-3924

Cherry - Todd Electric
Operations Manager: Tim Grablander
Email: timg@cherry-todd.com
Phone: (605) 856-4416

West Central Electric Coop (NO PHASE 3 POWER IN COUNTY, SERVES NW CORNER)
General Manager: Steve Reed
Staff Engineer: Kit B. Talich
Phone: 605-669-8100